BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of)	
)	
HAWAIIAN ELECTRIC COMPANY, INC.)	DOCKET NO. 2007-0048
)	
For Approval to Construct a 138kV)	
Overhead Transmission Line)	
Pursuant to HRS Section 269-27.6)	
For Item P0001361 - Kapolei)	
Business Park Overhead Relocation)	
)	

DECISION AND ORDER NO. 23624

Filed Sept. 4, 2007

At 2 o'clock P .M.

Karen Higashi

Chief Clerk of the Commission

ATTEST: A True Copy
KAREN HIGASHI
Chief Clerk, Public Utilities
Commission, State of Hawaii.

Karen Higashi

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of)	
HAWAIIAN ELECTRIC COMPANY, INC.)	Docket No. 2007-0048
For Approval to Construct a 138kV Overhead Transmission Line Pursuant to HRS Section 269-27.6 For Item P0001361 - Kapolei Business Park 138kV Overhead Relocation)	Decision and Order No. 23624

DECISION AND ORDER

By this Decision and Order, the commission approves HAWAIIAN ELECTRIC COMPANY, INC.'s ("HECO")[1] request to construct the relocated portion of an existing one hundred thirty-eight kilovolt ("138kV") transmission line on overhead facilities in connection with Item P0001361 - the Kapolei Business Park 138kV Overhead Relocation project ("Proposed Project"), pursuant to Hawaii Revised Statutes ("HRS") § 269-27.6. Currently, the 138kV transmission line runs diagonally through an undeveloped property and a developer has requested that HECO relocate a portion of the line 100 to 200 feet so that it travels along the perimeter of the parcel.

[1]HECO is a Hawaii corporation and a public utility as defined by Hawaii Revised Statutes ("HRS") § 269-1. HECO was initially organized under the laws of the Kingdom of Hawaii on or about October 13, 1891. HECO is engaged in the production, purchase, transmission, distribution, and sale of electricity on the island of Oahu in the State of Hawaii.

I.

Background

A.

Application

On February 14, 2007, HECO filed an Application seeking commission approval to relocate a section of 138kV transmission line above the surface of the ground in connection with the Proposed Project ("Application").[2] The Proposed Project was initiated at the request of LV Kapolei 54 LLC ("LVK54") to accommodate the development of commercial lots on its Kalaeloa property in Kapolei, at the end of Lauwiliwili Street.[3]

HECO proposes to relocate the existing Kalaeloa-Ewa Nui 138kV line at the northeast corner of the Kalaeloa property.[4] According to HECO, the transmission line will not traverse through any residential areas. It will run along the proposed Lauwiliwili Street extension and future unnamed cul-de-sac for a commercial development.[5] The proposed development consists of low-density industrial and business uses.[6] The zoning designation

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[2]HECO served copies of the Application on the DIVISION OF CONSUMER ADVOCACY, DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS ("Consumer Advocate"), an ex officio party to all proceedings before the commission, pursuant to HRS § 269-51 and Hawaii Administrative Rules § 6-61-62. No persons moved to intervene or participate in this docket.

[3]See Application at 3.

[4]See Application, Exhibits II and IV.

[5]Id. at 5; and Exhibit IV.

[6]Id. at 5.

is "I-2" or "Intensive Industrial."[7] The nearest homes are in the Barbers Point Naval Housing, approximately 5,000 feet away; in Ko Olina, approximately 7,800 feet away; and in Makakilo, approximately 8,200 feet away.[8] As such, HECO asserts that a public hearing pursuant to HRS § 269-27.5[9] is not required.[10]

The work will consist of the installation of four (4) new eighty-five (85) foot steel poles (i.e., poles SP18, SP19, SP20, SP21), six (6) 1-1/4" x 10' anchors, approximately 1,430 circuit feet of three-phase 138kV conductor, and approximately 3,368 circuit feet of shield wire conductors.[11] The existing shield wire cannot be spliced and must be replaced from deadend-to-deadend, i.e., from pole P19 to P27.[12]

The proposed relocated section of the 138kV transmission line will be designed to withstand 100 miles per hour winds, which requires the use of steel poles.[13]

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[7] Id. at 3, 5, and 6.

[8] Id. at 6.

[9] HRS § 269-27.5 titled "Construction of high-voltage electric transmission lines; hearing" states:

> Whenever a public utility plans to place, construct, erect, or otherwise build a new 46 kilovolt or greater high-voltage electric transmission system above the surface of the ground through any residential area, the public utilities commission shall conduct a public hearing prior to its issuance of approval thereof.

HRS § 269-27.5.

[10] See Application at 5-6.

[11] See Application at 4.

[12] Id. at 4 n.2.

[13] See Application at 4 n.1.

The current line is supported by both wooden poles and steel poles.[14]

Once the new line is installed, HECO will remove three (3) existing eighty-five (85) foot steel poles (i.e., poles P21, TP20, and TP21), as well as the anchors, guy wires, approximately 1,150 circuit feet of three-phase 138kV conductor, and approximately 3,088 circuit feet of shield wire conductors.[15]

HECO represents that the Proposed Project satisfies the requirements of HRS § 269-27.6. Specifically, HECO contends that the benefits (if any) of placing the 138kV transmission line underground do not outweigh the costs associated with the project. HECO represents that the visual impact will be minimal since the area of the intended lines is industrial and the nearest residential properties are far away.[16] Also, the transmission line is only being moved between 100-200 feet from its current position.[17] In addition, HECO states that the Proposed Project involves only 1,150 circuit feet of the existing Kalaeloa-Ewa Nui 138kV overhead transmission line which is approximately 8.0 miles long.[18]

HECO also asserts that no benefit exists which outweighs the estimated underground installation cost of

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[14]See Letter dated February 20, 2007, from HECO to the commission, Attachment 1, at 9.

[15]See Application at 4; and Exhibit IV.

[16]See Application at 6.

[17]See Application, Exhibit V at 1.

[18]Id.

$2.5 million (approximately $1.8 million more than the projected $654,000 amount for overhead installation).[19] According to HECO, the historical operating and maintenance costs for underground transmission lines are greater than the cost for overhead lines.[20] The five year average cost to maintain and operate an underground transmission line is $8,264.00 per mile.[21] During that same time-frame, an overhead line would cost an average of $6,037 per mile.[22]

HECO is unaware of any governmental public policy requiring underground placement of this transmission line.[23] HECO also represents that there is no governmental agency or other party, including LVK54, willing to pay for the additional costs associated with undergrounding this line.[24] LVK54 intends to turn over the Lauwiliwili Street extension and related side streets to the City and County of Honolulu, therefore, HECO sent letters to the City Department of Design and Construction ("City") and the State Department of Transportation ("DOT") inquiring as to whether they were willing to pay for the additional costs to underground the transmission line; the

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[19]See Application, Exhibit I at 1-4; Exhibit V at 1.

[20]See Application, Exhibit V, at 2.

[21]Id.

[22]Id.

[23]See Application, Exhibit V at 1.

[24]Id. at 1-2.

City declined and the DOT indicated that it did not have funding to contribute.[25]

Electric field measurements for the current transmission line range from about 0.048kV per meter to 2.196kV per meter, depending upon the location in relation to the project line.[26] Computer models were developed using the ENVIRO software program to estimate electric and magnetic field calculations for the Proposed Project.[27] The calculated electric field levels for the proposed overhead relocation ranged from 0.123kV per meter to 1.191kV per meter.[28] The magnetic field values measured at the current transmission line ranged from approximately 21.4 mG to 86.8 mG, depending upon location from the project line.[29] The estimated magnetic field levels for the Proposed Project ranged from approximately 23.5 mG to 48.9 mG.[30]

According to HECO, the estimated total project cost is $654,345 (less cash and in-kind contributions).[31] Construction is planned to start in October 2007 and be completed by March 2008.[32] In its Application, HECO requested commission approval by

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[25]See Application, Exhibit V at 2; Exhibit X at 7-8.

[26]See Letter dated February 20, 2007, from HECO to the commission at page vii.

[27]See id. at 10.

[28]Id. at vii.

[29]Id.

[30]Id.

[31]See Application at 1; and Exhibit I.

[32]See Application at 4.

June 2007 to allow the ordering of steel poles by July 2007. As the Kalaeloa-Ewa Nui 138kV line can only be taken out of service when either Kalaeloa Partners, L.P. or AES Hawaii, Inc.'s generating units are taken out of service for planned maintenance, which normally occurs at the beginning of each year, then the project could be delayed until early 2009 if the work cannot be completed by March 2008.[33]

On June 7, 2007, HECO submitted a letter revising the requested approval date set forth in its Application from June 2007 to August 2007.

B.

Consumer Advocate's Position

On July 31, 2007, the Consumer Advocate filed its Statement of Position informing the commission that it does not object to approval of the Application ("Consumer Advocate's SOP"). According to the Consumer Advocate, no public hearing is required in this docket because the transmission line is to be constructed in an area zoned for industrial, as opposed to residential use, and the nearest homes are over 5,000 feet away. As such, the public hearing requirement of HRS § 269-27.5 does not apply.[34]

In addition, the Consumer Advocate does not object to HECO's request to relocate the existing 138kV overhead transmission line above the surface of the ground. According to

[33] Id. at 5.

[34] See Consumer Advocate's SOP at 3-4.

the Consumer Advocate, the cost differential to place the 138kV line below versus above ground is estimated to be approximately $1.8 million ($2.5 million less $0.7 million) or approximately 2.6 times greater.[35] Moreover, the total estimated life cycle revenue requirement associated with the construction, operation and maintenance of the underground alternative is approximately $9,486,000 (or 1.3 times) more than the revenue requirement for the overhead placement of the line ($7,432,000 overhead and $16,918,000 underground).[36]

In considering the visual impact of the Proposed Project, the Consumer Advocate states:

> . . . the proposed project involves removing a short section (i.e., approximately 1,150 circuit feet) of the existing 138kV transmission line and relocating the section approximately 100-200 feet from the present location. The relocated line will be approximately 300 circuit feet (i.e., 1,430 less 1,150 of circuit feet) longer than the existing line to the proposed relocation alignment and thus will require the installation of one additional pole. In addition, the relocated lines will be placed on steel poles, while the existing lines are placed on wood poles. The height of the steel poles, however, will be the same as the height of the existing poles (i.e., 85 feet). Furthermore, it should be noted that the remainder of the 138kV transmission line system outside of the proposed project area (i.e., approximately 8 miles) will remain on overhead facilities.[37]

In addition to the above considerations, the Consumer Advocate notes that the Proposed Project is in an area zoned for industrial use, the intended development is for low-density warehouses, and the nearest public recreation areas

[35] See Consumer Advocate's SOP at 6.

[36] Id. at 6.

[37] See Consumer Advocate's SOP at 7 (footnotes omitted).

are over a mile and a half away.[38] The land upon which the relocated transmission line will be located does not contain any valuable natural resources and the location would not be important to tourism.[39]

Although overhead transmission lines are subject to more frequent outages, the duration of the outage is typically shorter and overhead lines are less sensitive to damage from construction, heat, and ground movement when compared to underground lines.[40] Thus, placing the relocated portion of the existing line in underground facilities will not improve reliability to a level justifying the additional costs.

In addition, the Consumer Advocate states that the Proposed Project was found to have lower magnetic field levels than the current existing system due to a larger ground clearance configuration.[41] The Consumer Advocate is not aware of any governmental policy or mandate requiring the underground placement of the Proposed Project's transmission line.[42] The Consumer Advocate believes that there are no benefits, including reliability, safety, and other considerations, which outweigh the substantial cost to place 1,430 circuit feet of the relocated 138kV transmission line in underground facilities.

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[38] See Consumer Advocate's SOP at 7-8.

[39] Id.

[40] See Consumer Advocate's SOP at 8-9.

[41] See Consumer Advocate's SOP at 10.

[42] Id. at 12.

The Consumer Advocate reserves its right to state a position as to whether the relocation costs are recoverable if such amount is sought in a future test year revenue requirement.

II.

Discussion

HRS § 269-27.6(a) titled "Construction of high-voltage electric transmission lines; overhead or underground construction" states:

> Notwithstanding any law to the contrary, whenever a public utility applies to the public utilities commission for approval to place, construct, erect, or otherwise build a new forty-six kilovolt or greater high voltage electric transmission system, either above or below the surface of the ground, the public utilities commission shall determine whether the electric transmission system shall be placed, constructed, erected, or built above or below the surface of the ground; provided that in its determination, the public utilities commission shall consider:
>
> (1) Whether a benefit exists that outweighs the costs of placing the electric transmission system underground;
>
> (2) Whether there is a governmental public policy requiring the electric transmission system to be placed, constructed, erected, or built underground, and the governmental agency establishing the policy commits funds for the additional costs of undergrounding;
>
> (3) Whether any governmental agency or other parties are willing to pay for the additional costs of undergrounding;
>
> (4) The recommendation of the division of consumer advocacy of the department of commerce and consumer affairs, which shall be based on an evaluation of the factors set forth under this subsection; and
>
> (5) Any other relevant factors.

HRS § 269-27.6(a).

First, under HRS § 269-27.6(a)(1), the commission finds that no benefit exists that outweighs the costs associated with constructing the line underground. The $2.5 million cost to underground the line is approximately four times the current estimated cost of $654,000 to place the line above ground. This $1.8 million cost differential cannot be justified as the Proposed Project merely shifts the position of a portion of an existing overhead line 100-200 feet in an area zoned industrial where the nearest homes are so distant that the lines will not dramatically impact the area visually. Thus, there does not appear to be a benefit that outweighs the additional costs of placing the 138kV transmission line underground.

Second, under HRS § 269-27.6(a)(2), the commission is not aware of any governmental policies requiring the underground placement of the transmission line; nor, third, is the commission aware of any governmental agency or any other party willing to pay for the additional costs of placing the lines underground, pursuant to HRS § 269-27.6(a)(3). The developer, the City and the DOT declined to contribute funding to underground the transmission line.[43]

Fourth, under HRS § 269-27.6(a)(4), the commission recognizes that the Consumer Advocate, after reviewing the Proposed Project under HRS § 269-27.6, stated that it "does not object to a [c]ommission finding that a public hearing is not necessary and [c]ommission approval of HECO's request to relocate

[43]See Application, Exhibit V, at 2; Exhibit X, at 7-8.

a portion of the existing 138kV transmission line to overhead facilities in a new alignment."[44]

HRS § 269-27.6(b) states:

> In making the determination set forth in subsection (a), for new 138 kilovolt or greater high-voltage transmission systems, the public utilities commission shall evaluate and make specific findings on all of the following factors:
>
> (1) The amortized cost of construction over the respective usable life of an above-ground versus underground system;
>
> (2) The amortized cost of repair over the respective usable life of an above-ground versus underground system;
>
> (3) The risk of damage or destruction over the respective usable life of an above-ground versus an underground system;
>
> (4) The relative safety and liability risks of an above-ground versus underground system;
>
> (5) The electromagnetic field emission exposure from an above-ground versus underground system;
>
> (6) The proximity and visibility of an above-ground system to:
>
> (A) High density population areas;
>
> (B) Conservation and other valuable natural resource and public recreation areas;
>
> (C) Areas of special importance to the tourism industry; and
>
> (D) Other industries particularly dependent on Hawaii's natural beauty;
>
> (7) The length of the system;
>
> (8) The breadth and depth of public sentiment with respect to an above-ground versus underground system; and

[44] See Consumer Advocate's SOP at 18.

(9) Any other factors that the public utilities commission deems relevant.

First, under HRS § 269-27.6(b)(1), the estimated construction cost to underground the transmission line is four times greater than for overhead construction (the estimated cost for underground is $2.5 million versus $654,000 for overhead). No information was provided by the parties on the specific issue of the amortized cost of construction over the respective usable life of an above-ground versus underground system. However, given the figures provided by the parties, the commission finds that the numbers available to the commission support an overhead alignment.

Second, with respect to HRS § 269-27.6(b)(2), no specific information was provided by the parties on the amortized cost of repair over the respective usable life of an above-ground versus underground system. However, according to the parties, when measured per mile, the historical operating and maintenance cost for underground lines is $2,227.00 or 37% per year higher than that for overhead lines.

Third, under HRS § 269-27.6(b)(3), overhead lines are subject to more frequent power outages, however, they are of shorter duration than outages in underground lines. Underground lines are affected by construction, heat, and ground movement.

Fourth, with respect to under HRS § 269-27.6(b)(4), which addresses the relative safety and liability risks, there

are no long-term health related impacts expected with either an above-ground or underground system for this project based on Hawaii safety codes.

Fifth, the "Hawaiian Electric Company, Kalaeloa - Ewa Nui 138 kV Transmission Line Relocation at the Kapolei Business Park, Electric and Magnetic Field Evaluation" study by Enertech Consultants of Santa Clara, Inc. compared the two options and the existing line configuration. The existing condition generates the highest electric and magnetic fields, followed by the proposed overhead option. The underground stem would generate the lowest electric and magnetic fields.

Sixth, under HRS § 269-27.6(b)(6), the Proposed Project is not within a high density population area. Also, the nearest public recreation area is the shoreline on the ocean side of Kaomi Loop and Kapolei Regional Park, which are located about 1.5 miles away from the project site. There are no valuable resources in the vicinity. The project site is not in an area of special importance to the tourism industry, nor other industries dependent on Hawaii's natural beauty.

Seventh, the proposed transmission line alternatives have approximately the same length of 1,430 circuit feet.

Eighth, the nearby residents will be informed by Applicant.

Based on the foregoing, the commission concludes that HECO's request to relocate a section of 138kV transmission line

above the surface of the ground in connection with the Proposed Project, in the manner set forth in the Application, is reasonable and should be approved.

III.

Orders

THE COMMISSION ORDERS:

1. HECO's request to construct the relocated portion of an existing 138kV overhead line in connection with the Proposed Project, in the manner set forth in the Application, is approved, pursuant to HRS § 269-27.6(a).

2. This docket is closed, unless ordered otherwise by the commission.

DONE at Honolulu, Hawaii SEP - 4 2007.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

By _____
Carlito P. Caliboso, Chairman

By _____
John E. Cole, Commissioner

APPROVED AS TO FORM:

By _____
Leslie H. Kondo, Commissioner

_____
Jodi K. Yi
Commission Counsel

2007-0048.eh

CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing Decision and Order No. 23624 upon the following Petitioners, by causing a copy hereof to be mailed, postage prepaid, and properly addressed to each such party.

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DATED: SEP - 4 2007